CLAIM AMENDMENTS

Claim 1. (previously presented) An apparatus for the detection of movements and/or positions of an object, in which a voltage pulse is in each case produced as a function of the movements and/or positions of the object in at least one coil, by means of at least one magnetic field which carries out a relative movement with respect to the coil and acts on it, with the coil at least partially surrounding a spring which is composed of magnetically permeable material and carries out a reciprocating movement under the influence of the magnetic field, on the basis of the reluctance effect, characterized in that the magnetic field is produced by a magnet pair comprising two adjacent magnets (6, 7) of opposite polarity, which are arranged one behind the other in the direction of movement of the object (1, 24, 32) and whose longitudinal axes, in the same way as the longitudinal axes of the coil (4), are oriented essentially at right angles to the movement direction of the object, and in that the reciprocating movement of the spring (5) causes a polarity change, which produces the respective voltage pulse, in the magnetic field with respect to the coil (4).

Claim 2. (previously presented) The appratus as claimed in the precharacterizing clause of claim 1, characterize in that the magnetic field is produced by a magnet pair whose magnets (44, 45) are arranged alongside one another when viewed in the direction of their relative movement with respect to the coil

(52), with both the pole surfaces of the magnets (44, 45) and that end surface of the leaf spring (46) which faces the pole surfaces of the magnets (44, 45) being essentially in the form of rectangles, whose longitudinal axes include an angle (α) of less than 60° with the tangent to the movement path (48) of the magnets (44, 45), and in that the reciprocating movement of the spring (46) causes a polarity change, which produces the respective voltage pulse, in the magnetic field in the coil (52).

Claim 3. (currently amended) The apparatus as claimed in claim 1 ~~or 2~~ , characterized in that the spring (5; 46) is in the form of a leaf spring which is clamped in at one end.

Claim 4. (currently amended) The apparatus as calimed in Claim 1 ~~one of claims 1 to 3~~ , characterized in that the mutually directly adjoining magnets (6, 7; 44, 45) are firmly connected to a moving mount (1; 26; 31; 51).

Claim 5. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 4~~ , characterized in that the moving object (1) is formed by the shaft of a tachometer.

Claim 6. (original) The apparatus as claimed in claim 5, characterized in that the shaft (1) of the tachometer is provided with a concentric collar (25) which at least partially surrounds it and on whose inner wall (26) facing the shaft (1) the magnets (6, 7) are mounted.

Claim 7. (original) The apparatus as claimed in claim 6, characterized in that at least one coil (4), which is provided with a spring (5), is arranged in the space between the inner wall (26) of the collar (25) and the shaft (1).

Claim 8. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1, 3 or 4~~ , characterized in that at least one coil (4), which is provided with a spring (5), is arranged in a sensor head (34) which is connected to an object (32) which moves along a scale (29), with the scale to be scanned by the sensor head (34) comprising at least two sections (29a, 29b) at whoch abutment or joining point a magnet pair (6, 7), which interacts with the coil (4), is in each case arranged.

Claim 9. (original) The apparatus as claimed in claim 8, characterized in that the sensor head (34) is equipped with two coils (4, 4) which each surround one spring (5).

Claim 10. (currently amended) The apparatus as claimed in Claim 8 ~~one of claims 8 or 9~~ , characterized in that the scale (29) is in the form of a linear scale which is provided with an absolute coding (30) which can be read by scanning electronics (35) of the sensor head (34).

Claim 11. (currently amended) The apparatus as claimed in Claim 8 ~~one of claims 8 to 10~~ , characterized in that the moving object is formed by the carriage (32) of a machine tool.

Claim 12. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 11~~ , characterized in that the apparatus carries out the function of a voltage generator.

Claim 13. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 12~~ , characterized in that the voltage pulses which are produced can be used as signals which can be supplied to an electronic counting circuit.

Claim 14. (original) The apparatus as claimed in claim 2, characterized in that the longitudinal axes of the essentially rectangular pole surfaces of the magnets (44, 45) include an angle (α) of 20 to 30^{o} with the tangent to the movement path of the magnets (44, 45).

Claim 15. (currently amended) The apparatus as claimed in claim 2 ~~or 14~~ , characterized in that both the width and the length of the pole surface of the magnets (44, 45) is greater than the width and the length of the end surface of the leaf spring (46).

Claim 16. (original) The apparatus as claimed in Claim 15, characterized in that the length and the width of the pole surfaces of the magnets (44, 45) are in each case a multiple of the length and width of the end surface of the leaf spring (46).

Claim 17. (currently amended) The apparatus as claimed in Claim 2 ~~one of claims 2 or 14 to 16~~ , characterized in that the leaf spring (46) is clamped in at its end facing away from those pole surfaces of the magnets (44, 45) which pass it, between two holding plates (54, 55) which are provided with damping inserts.

Claim 18. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 17~~ , characterized in that the free end of the spring (5; 46) projects slightly beyond the end of the coil (4; 52) which surrounds it.

Claim 19. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 7 or 14 to 18~~ , characterized in that the mount (51) is formed by a disk which is connected to the shaft (50) of a tachometer.

Claim 20. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 19~~ , characterized in that the magnets (6, 7; 44, 45), which are arranged in pairs, are associated with a plurality of coils (4, 4′; 52, 52′) which are each equipped with one spring (5; 46).

Claim 21. (original) The apparatus as claimed in claim 20 characterized in that the magnets (6, 7; 44, 45), which revolve with the shaft (1; 50), have two associated coils (4, 4′, 52, 52′), which are each equipped with one spring (5; 46), and the distance between the coils (4, 4′; 52, 52′), is greater than the

extent of the magnets (6, 7; 44, 45) in the direction of their movement.

Claim 22. (currently amended) The apparatus as claimed in claim 20 ~~or 21~~ , characterized in that the two coils (4, 4′; 52, 52′) are in each case electrically connected back-to-back in series with one another.

Claim 23. (currently amended) The apparatus as claimed in Claim 1 ~~one of claims 1 to 7 or 14 to 22~~ , characterized in that the apparatus is provided with sensors (68 - 70) which can be acted on by means of at least one actuator (67) and are used for the detection of the movements and/or positions of an object, while the magnets (44, 45; 44′, 45; 44′′, 45′′) are used only to supply power to a microprocessor circuit (E).

Claim 24. (original) The apparatus as claimed in claim 23, characterized in that the actuator (67) is in the form of a magnet, and the sensors are in the form of MR or Hall sensors (68 - 70).

Claim 25. (new) The apparatus as claimed in claim 2, characterized in that the spring (5; 46) is in the form of a leaf spring which is clamped in at one end.

Claim 26. (new) The apparatus as claimed in Claim 3, characterized in that at least one coil (4), which is provided

with a spring (5), is arranged in a sensor head (34) which is connected to an object (32) which moves along a scale (29), with the scale to be scanned by the sensor head (34) comprising at least two sections (29a, 29b) at whoch abutment or joining point a magnet pair (6, 7), which interacts with the coil (4), is in each case arranged.

Claim 27. (new) The apparatus as claimed in Claim 4, characterized in that at least one coil (4), which is provided with a spring (5), is arranged in a sensor head (34) which is connected to an object (32) which moves along a scale (29), with the scale to be scanned by the sensor head (34) comprising at least two sections (29a, 29b) at whoch abutment or joining point a magnet pair (6, 7), which interacts with the coil (4), is in each case arranged.

Claim 28. (new) The apparatus as claimed in Claim 9, characterized in that the scale (29) is in the form of a linear scale which is provided with an absolute coding (30) which can be read by scanning electronics (35) of the sensor head (34).

Claim 29. (new) The apparatus as claimed in Claim 14, characterized in that both the width and the length of the pole surface of the magnets (44, 45) is greater than the width and the length of the end surface of the leaf spring (46).

Claim 30. (new) The apparatus as claimed in Claim 14, characterized in that the leaf spring (46) is clamped in at its end facing away from those pole surfaces of the magnets (44, 45) which pass it, between two holding plates (54, 55) which are provided with damping inserts.

Claim 31. (new) The apparatus as claimed in Claim 14, characterized in that the mount (51) is formed by a disk which is connected to the shaft (50) of a tachometer.

Claim 32. (new) The apparatus as claimed in Claim 21, characterized in that the two coils (4, 4'; 52, 52') are in each case electrically connected back-to-back in series with one another.

Claim 33. (new) The apparatus as claimed in Claim 14, characterized in that the apparatus is provided with sensors (68 - 70) which can be acted on by means of at least one actuator (67) and are used for the detection of the movements and/or positions of an object, while the magnets (44, 45; 44', 45; 44'', 45'') are used only to supply power to a microprocessor circuit (E).